

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Wireless E911 Location Accuracy	)	PS Docket No. 07-114
Requirements	)	
	)	

**REPLY COMMENTS OF CTIA**

Thomas C. Power  
Senior Vice President and General Counsel

Scott K. Bergmann  
Senior Vice President, Regulatory Affairs

Matthew B. Gerst  
Vice President, Regulatory Affairs

**CTIA**  
1400 Sixteenth Street, NW  
Suite 600  
Washington, DC 20036  
(202) 785-0081

June 18, 2019

## TABLE OF CONTENTS

I.	INTRODUCTION AND SUMMARY.....	1
II.	THE RECORD SHOWS THAT VERTICAL SOLUTIONS ARE EVOLVING AND REFLECTS A DIVERSE ARRAY OF VIEWPOINTS ON 9-1-1 LOCATION POLICY AMONG PUBLIC SAFETY STAKEHOLDERS.....	3
III.	A Z-AXIS METRIC OF $\pm 3$ METERS IS A WORTHY TARGET TO ACHIEVE OVER TIME.....	6
IV.	THE COMMISSION SHOULD AFFIRM THAT Z-AXIS DATA WILL BE DELIVERED AS ALTITUDE INFORMATION. ....	8
V.	THE COMMISSION SHOULD AFFIRM THAT COMPLIANCE IS TO BE ACHIEVED IN THE TEST BED.....	10
VI.	THE RECORD SUGGESTS THAT FURTHER TESTING WOULD BE BENEFICIAL TO EVALUATING POTENTIAL VERTICAL LOCATION TECHNOLOGY SOLUTIONS. ....	12
VII.	THE RECORD DEMONSTRATES COMMITMENTS TO USE 9-1-1-RELATED Z-AXIS LOCATION DATA ONLY FOR 9-1-1 PURPOSES. ....	12
VIII.	CONCLUSION.....	14

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Wireless E911 Location Accuracy	)	PS Docket No. 07-114
Requirements	)	
	)	

**REPLY COMMENTS OF CTIA**

CTIA submits these reply comments in response to the initial comments filed in the above-captioned proceeding proposing to adopt a vertical, or z-axis, metric of  $\pm 3$  meters into the Federal Communication Commission's (Commission or FCC) 9-1-1 wireless location accuracy rules.<sup>1</sup>

**I. INTRODUCTION AND SUMMARY.**

The record shows that a broad range of stakeholders across the 9-1-1 ecosystem share the goal of ensuring the delivery of accurate, actionable vertical location information to help public safety respond to wireless 9-1-1 calls. However, vertical location solutions are evolving today, and no solutions have yet been validated to meet the Commission's proposed  $\pm 3$ -meter z-axis metric consistent with the *Fourth Report and Order*. In fact, this proceeding is now driving the development of vertical location solutions, in contrast to the horizontal location commercial technologies that were available when the Commission adopted the more targeted x- and y-location requirements as part of the *Fourth Report and Order*. Thus, the Commission's rules should reflect the consensus of technological feasibility held by stakeholders throughout the

---

<sup>1</sup> *Wireless E911 Location Accuracy Requirements*, Fourth Further Notice of Proposed Rulemaking, PS Docket No. 07-114, FCC 19-20 (rel. Mar. 18, 2019) (*Fourth FNPRM*).

wireless ecosystem including wireless service providers, original equipment manufacturers (OEMs) and operating system (OS) providers.

The record also reflects that, given the evolving state of vertical location solutions, there are diverse viewpoints on 9-1-1 vertical location policy – including among public safety stakeholders. Some support the FCC’s proposal while others recommend the collection of more comprehensive z-axis data and still others call for the FCC to reject z-axis in toto and require dispatchable location only. These divergent views add a layer of complexity to resolving this proceeding, and CTIA suggests that the Commission facilitate further discussion among stakeholders to assess whether the Commission’s existing vertical location policies and rules align with current views on achieving accurate and actionable information for 9-1-1 going forward. In the meantime, the wireless industry will continue to work towards meeting the Commission’s vertical location goals as set out in the *Fourth Report and Order*.

In response to the *Fourth FNPRM*, the Commission should recognize that there was broad support for setting a  $\pm 3$ -meter z-axis metric as an important target, but the record demonstrates that validating whether this metric is achievable in the near-term requires further testing. The Commission should also recognize that the record reflects broad agreement with the *Fourth FNPRM*’s proposal to require providers to deliver z-axis vertical location data as an altitude level, and not as floor level information at this time. While floor level information associated with z-axis information may be helpful to public safety officials in the long term, commenters including some public safety stakeholders raise questions about whether providing floor level information is achievable given the current state of z-axis technology. Further, the record confirms that it is impractical to apply the z-axis metric to wireless 9-1-1 calls from all mobile devices, because z-axis solutions may require capabilities not yet incorporated into all

devices. Finally, the record supports the view that vertical location data associated with 9-1-1 calls should only be used for 9-1-1 purposes or otherwise required by law.

## **II. THE RECORD SHOWS THAT VERTICAL SOLUTIONS ARE EVOLVING AND REFLECTS A DIVERSE ARRAY OF VIEWPOINTS ON 9-1-1 LOCATION POLICY AMONG PUBLIC SAFETY STAKEHOLDERS.**

The record shows that a broad range of stakeholders across the 9-1-1 ecosystem share the goal of ensuring the delivery of accurate, actionable vertical location information to help public safety respond to wireless 9-1-1 calls.<sup>2</sup> However, as CTIA and others recognized in the initial comments, the Commission's proceeding is driving the development of wholly new vertical location solutions.<sup>3</sup> Unlike horizontal location technology at the time of the *Fourth Report and Order*,<sup>4</sup> where commercial technologies were available and broadly adopted by consumers, vertical location solutions are nascent and very much evolving today.<sup>5</sup> Thus, while the proposal for a  $\pm 3$ -meter metric serves as a goal for emerging vertical location technologies to strive for, the fact remains that no solutions have yet been validated. As T-Mobile notes, more "development work, testing, refinement, and further improvement is required before a  $\pm 3$ -meter

---

<sup>2</sup> See, e.g., Comments of AT&T, PS Docket No. 07-114, at 1 (filed May 20, 2019) (AT&T Comments); Comments of Airwave Developers LLC, PS Docket No. 07-114, at 1 (filed May 20, 2019) (AWD Comments at 1); Comments of Competitive Carriers Comments, PS Docket No. 07-114, at 1 (filed May 20, 2019) (CCA Comments); Comments of CTIA, PS Docket No. 07-114, at 1-2 (filed May 20, 2019) (CTIA Comments); Comments of Google LLC, PS Docket No. 07-114, at 1 (filed May 20, 2019) (Google Comments); Comments of International Association of Fire Chiefs, National Association of State EMS Officials, and National Sheriffs' Association, PS Docket No. 07-114, at 2 (filed May 20, 2019) (IAFC et al. Comments); Comments of Precision Broadband, PS Docket No. 07-114, at 1 (filed May 20, 2019) (PB Comments); Comments of Public Knowledge, PS Docket No. 07-114, at 1 (filed May 20, 2019) (PK Comments); Comments of T-Mobile USA Inc., PS Docket No. 07-114, at 1-2 (filed May 20, 2019) (T-Mobile Comments); Comments of Verizon, PS Docket No. 07-114, at 1-2 (filed May 20, 2019) (Verizon Comments).

<sup>3</sup> See CTIA Comments at 5-6; T-Mobile Comments at 3, 9.

<sup>4</sup> See *Wireless E911 Location Accuracy Requirements*, Fourth Report and Order, 30 FCC Rcd 1259 (2015) (*Fourth Report and Order*).

<sup>5</sup> See CTIA Comments at 5-6; T-Mobile Comments at 3, 9.

vertical accuracy metric can be consistently and reliably met for public safety purposes....”<sup>6</sup>

CTIA is hopeful that emerging vertical location technology solutions will participate in Stage Za and demonstrate the ability to deliver  $\pm 3$  meters.<sup>7</sup>

Further, commenters agree that there is much progress to be made and welcome the input and involvement of OEMs and OS providers. For example, T-Mobile reports that “entities outside those tested in the Test Bed, including major mobile OS providers, report they are working to develop and improve vertical location solutions—intended to be leveraged for 911—in the same way they have done for horizontal location.”<sup>8</sup> AT&T adds that the “biggest determinant to meeting the vertical accuracy metric is incorporating the technology into the handsets to allow the z-axis measurements to be delivered to the public safety answering points.”<sup>9</sup> CTIA agrees with these commenters and welcomes the contributions of stakeholders throughout the wireless ecosystem to meet the Commission’s vertical location requirements.

The record also reflects varied viewpoints among the public safety community on how the Commission should move forward on 9-1-1 z-axis location policy. For example:

- APCO calls on the Commission to revisit the *Fourth Report and Order*, refrain from adopting a z-axis metric, and mandate instead that wireless providers deploy dispatchable location solutions only. APCO argues that if the Commission nonetheless retains the z-axis approach, any z-axis metric adopted should include floor-level information.<sup>10</sup>

---

<sup>6</sup> T-Mobile Comments at 3-4.

<sup>7</sup> See Press Release, *CTIA’s 9-1-1 Location Accuracy Technologies Test Bed Opens for Additional Testing*, CTIA (Feb. 26, 2019), <https://www.ctia.org/news/ctias-9-1-1-location-accuracy-technologies-test-bed-opens-for-additional-testing> (Stage Za Announcement).

<sup>8</sup> T-Mobile Comments at 8-9.

<sup>9</sup> AT&T Comments at 1-2.

<sup>10</sup> Comments of the Association of Public-Safety Communications Officials-International, Inc., PS Docket No. 07-114, at 5-7 (filed May 20, 2019) (APCO Comments).

- The International Association of Fire Fighters (IAFF) strongly supports the adoption of a  $\pm 3$ -meter metric, stating that such a metric “significantly improves emergency response” and provides the information necessary to “locate wireless callers in distress and ensure the safety of those dispatched to aide them.”<sup>11</sup>
- The International Association of Fire Chiefs (IAFC), the National Association of State EMS Officials, and the National Sheriffs’ Association encourage the Commission to adopt the  $\pm 3$ -meter metric, observing that a more targeted metric would unnecessarily delay implementation.<sup>12</sup>
- And NENA urges the Commission to consider requiring service providers to deliver geodetic Location Object (LO) information including x, y, and z coordinates and more. With a focus on spurring the transition to Next Generation 9-1-1, NENA asserts that delivery of an LO represents the lowest barrier to entry to three-dimensional location for OSPs.<sup>13</sup> NENA also explains that the premature use of floor level information may result in the introduction of avoidable errors.<sup>14</sup>

These commenters represent just a sample of the differing views that have emerged in the proceeding.

Although the record reflects broad support for ensuring the delivery of accurate, actionable vertical location information, the still-developing state of vertical location solutions and the divergent viewpoints highlighted above add a layer of complexity to resolving this proceeding and meeting the Commission’s existing benchmarks. For these reasons, the Commission should facilitate further discussion among all stakeholders, including wireless service providers, OEMs, OS providers, and public safety, to assess vertical location policy

---

<sup>11</sup> Comments of the International Association of Fire Fighters, PS Docket No. 07-114, at 3-4 (filed May 20, 2019) (IAFF Comments).

<sup>12</sup> IAFC et al. Comments at 2-3.

<sup>13</sup> Comments of NENA: The 9-1-1 Association, PS Docket No. 07-114, at 5 (filed May 20, 2019) (NENA Comments).

<sup>14</sup> *Id.* at 6-7.

going forward. In the meantime, the wireless industry will continue to work towards meeting the Commission's vertical location goals as set out in the *Fourth Report and Order*.

### **III. A Z-AXIS METRIC OF $\pm 3$ METERS IS A WORTHY TARGET TO ACHIEVE OVER TIME.**

Many commenters including CTIA support adoption of a  $\pm 3$ -meter z-axis metric as an important target to achieve over time, but recognize that further testing is required to prove the capability and scalability of this metric.<sup>15</sup> T-Mobile, for example, notes that a “3-meter metric is grounded in the important public safety policy goal of improving the ability of first responders to locate 911 callers” but reports that “more development work, testing, refinement, and further improvement is required before a  $\pm 3$  meter vertical accuracy metric can be consistently and reliably met for public safety purposes, particularly in the most challenging urban and dense urban settings....”<sup>16</sup>

Google states that it “is committed to offering high-quality z-axis information” but urges the Commission to “use an incremental approach for the z-axis metric.”<sup>17</sup> It proposes a phased-in approach with increasingly demanding z-axis coverage requirements over an aggressive but reasonable timeframe.<sup>18</sup> In doing so, Google encourages the Commission to “adopt a well-communicated, phased-in approach to get reliable and usable vertical location information into first responders’ hands as soon as possible, with a steady trajectory set to enhance the precision and utility of that data over time.”<sup>19</sup> Specifically, Google suggests that the Commission first

---

<sup>15</sup> See Verizon Comments at 2; AT&T Comments at 2; T-Mobile Comments at 2-3.

<sup>16</sup> T-Mobile Comments at 3-4.

<sup>17</sup> Google Comments at 2.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.* at 6.



adopt a clear z-axis metric of  $\pm 4$  meters for 70 percent of calls by 2021 with a confidence level of 90 percent, with more targeted requirements over future implementation deadlines:  $\pm 4$ -meter accuracy for 80 percent of calls, 80 percent of the time, by 2022; and  $\pm 3$ -meter accuracy for 80 percent of calls, 80 percent of the time by 2023.<sup>20</sup> Google's proposal warrants further consideration, as it would provide a "focal point for further testing, development, and implementation of evolving z-axis location technologies" and deliver the  $\pm 3$ -meter metric, while also addressing some of the existing concerns regarding the feasibility of a more stringent requirement in the near future.

Other commenters reflect potential challenges regarding compliance with the  $\pm 3$ -meter metric in the existing 2021 and 2023 timeframes. NextNav suggests that the Commission consider a handset phase-in over time: "[g]iven that the first z-axis implementation milestone is now less than 24 months away, the Commission must recognize that undeniable limitations exist in how rapidly calibrated altitude calculation capability can be perpetuated throughout the universe of existing handsets."<sup>21</sup> T-Mobile adds, "the availability of barometric pressure sensors in handsets will affect the feasible percentage of wireless 9-1-1 calls that would be capable of  $\pm 3$ -meter accuracy by 2021 or 2023."<sup>22</sup> And Verizon suggests that some z-axis solutions may require corresponding network-level capabilities to help calibrate and process information generated by a device's barometric pressure sensor.<sup>23</sup> To that end, while some standards work is already complete, and other work is under way to address how service providers will format and

---

<sup>20</sup> *Id.* at 9-10.

<sup>21</sup> Comments of NextNav, LLC, PS Docket No. 07-114, at 8 (filed May 20, 2019) (NextNav Comments).

<sup>22</sup> T-Mobile Comments at 5-6.

<sup>23</sup> Verizon Comments at 4-5.

deliver z-axis information to PSAPs, at this point the timing of implementation of commercially available solutions remains unclear.<sup>24</sup>

Finally, contrary to the arguments made by the Boulder Emergency Telephone Service Authority (BRETSA), the Texas 9-1-1 Alliance, the Texas Commission on State Emergency Communications, the Municipal Emergency Communication Districts Association, and others,<sup>25</sup> a more targeted metric than 3 meters is not feasible at this time. The record does not contain evidence to show that a more stringent metric is currently achievable on a consistent and scalable basis. The record does however show that more testing and development is necessary before a more targeted metric may be achieved.

#### **IV. THE COMMISSION SHOULD AFFIRM THAT Z-AXIS DATA WILL BE DELIVERED AS ALTITUDE INFORMATION.**

The record reflects broad agreement with the *Fourth NPRM's* proposal to require providers to deliver z-axis vertical location data as an altitude level, and not as floor level information at this time.<sup>26</sup> While floor level information associated with z-axis information may be helpful to public safety officials in the long term, commenters including some public safety stakeholders raise questions about whether providing floor level information is achievable given the current state of z-axis technology.

CTIA agrees with those commenters that support delivery of z-axis data as height above ellipsoid in meters, as defined in the WGS-84 standard. WGS-84 is a trusted standard and would

---

<sup>24</sup> *Id.*

<sup>25</sup> See, e.g., Comments of Boulder Regional Emergency Telephone Service Authority, PS Docket No. 07-114, at 4-5 (filed May 17, 2019) (BRETSA Comments); Comments of Texas 9-1-1 Entities, Texas Commission on State Emergency Communications, and Municipal Emergency Communication Districts Association, PS Docket No. 07-114, at 5-6 (filed May 20, 2019) (Texas 9-1-1 Comments).

<sup>26</sup> See, e.g., T-Mobile Comments at 12; Verizon Comments at 2; CTIA Comments at 3, 9.

enable PSAPs to best prepare for and efficiently utilize z-axis information with 9-1-1 calls.<sup>27</sup> For example, the Texas 9-1-1 Alliance, the Texas Commission on State Emergency Communications, and the Municipal Emergency Communication Districts Association recognized that the WGS-84 standard's meters above the ellipsoid "appears to be the current standardized approach" and "may be the appropriate vertical reference point" here.<sup>28</sup> NENA similarly supports WGS-84.<sup>29</sup> And T-Mobile observes that providers currently utilize this reference system when providing x,y location estimates and asserts that adopting this reference system would be most effective for PSAPs.<sup>30</sup>

The record offers no evidence of z-axis technology solutions that can produce specific floor level information.<sup>31</sup> As Verizon noted, "strict floor level accuracy might be a valid longer term goal" but further testing and development are required at this time.<sup>32</sup> Further, as NENA explains, "an authoritative reference source for the number and height of floors in any building does not currently exist."<sup>33</sup> Nor is there a reference to determine, validate, or ingest floor labels.<sup>34</sup> NENA notes further that in the event the source location is imprecise, reverse-geocoding to a floor level may not be as helpful as provision of an altitude level.<sup>35</sup>

---

<sup>27</sup> NextNav Comments at 9; Texas 9-1-1 Comments at 4; T-Mobile Comments at 11-12; NENA Comments at 2-3.

<sup>28</sup> Texas 9-1-1 Comments at 4.

<sup>29</sup> NENA Comments at 2-3.

<sup>30</sup> T-Mobile Comments at 11-12.

<sup>31</sup> CTIA Comments at 3, 9.

<sup>32</sup> Verizon Comments at 2.

<sup>33</sup> NENA Comments at 5-6.

<sup>34</sup> *Id.*; *see also* T-Mobile Comments at 12.

<sup>35</sup> NENA Comments at 16-18.

In contrast, APCO argues that absent the provision of floor level information, public safety will be left without actionable vertical location information.<sup>36</sup> APCO's reference to an academic paper that was not supported by testing of a solution is not sufficient to demonstrate that such technology exists or will soon.<sup>37</sup> Other public safety entities make clear that 3-meter accuracy will deliver actionable location information, providing floor level accuracy.<sup>38</sup> For these reasons, the Commission should adopt rules that reflect how location accuracy technology is evolving to deliver z-axis data as altitude information using height above ellipsoid in meters, as defined in the WGS-84 standard.

## **V. THE COMMISSION SHOULD AFFIRM THAT COMPLIANCE IS TO BE ACHIEVED IN THE TEST BED.**

The record also reflects support for the current approach to compliance benchmarks that are based on performance measured in the Test Bed.<sup>39</sup> As Verizon and others recognize, reliance on the Test Bed performance of capable devices “enables service providers to phase in capable handsets in a manner consistent with the Commission’s longstanding approach to handset-based solutions generally.”<sup>40</sup>

Alternatively, it is impractical to apply the z-axis metric to wireless calls from all mobile devices. Current z-axis solutions may require capabilities not yet incorporated into devices widely available to wireless consumers, such as barometric pressure sensors with certain capabilities. NextNav observes that “undeniable limitations exist” with respect to calibrated

---

<sup>36</sup> APCO Comments at 7.

<sup>37</sup> *Id.* at 6.

<sup>38</sup> *See, e.g.*, BRETSA Comments at 4 (“BRETSA understands that floor-level accuracy is a critical objective, and 3-meter accuracy is floor level accuracy”).

<sup>39</sup> *See, e.g.*, CTIA Comments at 8-9; T-Mobile Comments at 3-6; Verizon Comments at 3.

<sup>40</sup> Verizon Comments at 3; *see also* T-Mobile Comments at 3-6; CTIA Comments at 8-8.

altitude capability and existing handsets.<sup>41</sup> A solution tested and verified in the Test Bed, and deployed in the network, will only work with devices that contain such capabilities. Any vertical location compliance regime “must be specifically targeted to handsets tested in the Test Bed and equipped with barometers and any other functionality necessary to support barometric pressure-based altitude estimation solutions.”<sup>42</sup> Furthermore, “[b]ecause there is a substantial installed base of handsets without barometric pressure sensors—including older smartphones—any rule that applies to all wireless calls would have to be phased in over a long enough period of time to account for natural handset turnover, at a time when handset turnover is taking longer.”<sup>43</sup> And as Google recognizes, sufficient time to “sunset support for any older devices with lesser capabilities” would be critical for more strict compliance obligations.<sup>44</sup>

Further, the Commission should not require providers to conduct “proof-of-performance” in the covered markets.<sup>45</sup> The Commission should instead maintain its current approach in which the Test Bed would validate that a given technology solution can meet the proposed z-axis metric of  $\pm 3$  meters for 80 percent of indoor wireless calls in the Test Bed, and a wireless provider would then certify that the z-axis technology in its network is deployed consistently with how it was tested in the Test Bed.<sup>46</sup>

---

<sup>41</sup> NextNav Comments at 8

<sup>42</sup> See T-Mobile Comments at 4; *see also* AT&T Comments at 3.

<sup>43</sup> T-Mobile Comments at 5; *see also e.g.*, CTIA Comments at 8-9.

<sup>44</sup> Google Comments at 11-12.

<sup>45</sup> BRETSA Comments at 5-6.

<sup>46</sup> CTIA Comments at 8.

**VI. THE RECORD SUGGESTS THAT FURTHER TESTING WOULD BE BENEFICIAL TO EVALUATING POTENTIAL VERTICAL LOCATION TECHNOLOGY SOLUTIONS.**

As CTIA emphasizes above, the record supports the adoption of a  $\pm 3$ -meter z-axis metric as an important target to achieve over time. However, many commenters also recognize that further testing and development are required to prove the capability and scalability of this metric.

Google expressed an interest in participating in testing and offers several reactions regarding testing.<sup>47</sup> On behalf of the 9-1-1 Location Technologies Test Bed LLC, CTIA welcomes any feedback to improve the testing or to ensure that the testing is appropriate for any given technology. Further, CTIA encourages vertical location solution providers (including commenters Airwave Developers and Precision Broadband who express interest in providing vertical location solutions) as well as those that tested in Stage Z, to participate in further testing.<sup>48</sup> As the Commission previously stated, “new or emerging vertical location solutions” present the potential to meet the proposed metric.<sup>49</sup> CTIA remains hopeful that emerging vertical location technology solutions tested will demonstrate the ability to deliver  $\pm 3$  meters for 80 percent of wireless calls in the Test Bed across all of the test regions and morphologies.

**VII. THE RECORD DEMONSTRATES COMMITMENTS TO USE 9-1-1-RELATED Z-AXIS LOCATION DATA ONLY FOR 9-1-1 PURPOSES.**

The record supports the view that vertical location data associated with 9-1-1 calls should only be used for 9-1-1 purposes or otherwise required by law and should not be used for

---

<sup>47</sup> Google Comments at 4.

<sup>48</sup> For example, Airwave Developers states that Citizens Broadband Radio Service is one technology and spectrum advance that may provide a solution. AWD Comments at 1-2. Similarly, Precision Broadband has been developing a Fixed Broadband 911 System (FB911) which leverages facilities-based broadband networks to provide emergency location information. PB Comments at 2, 6-7.

<sup>49</sup> *Fourth FNPRM* at ¶ 27.

commercial purposes.<sup>50</sup> Some elements of the Public Knowledge comments, however, are misguided or outside the scope of this proceeding.

Although the wireless industry commits that z-axis location data associated with 9-1-1 calls should only be used for 9-1-1 purposes, it is worth recounting the *Fourth Report and Order*'s discussion regarding privacy and security in light of the Public Knowledge comments. The regulatory framework adopted by the Commission extends to processes and data collected to derive "dispatchable location" for a 9-1-1 call, not all geolocation data.<sup>51</sup> Further, the Commission's privacy and security actions in the *Fourth Report and Order* related to 9-1-1, the NEAD, and related dispatchable location operations, but were not intended to establish privacy policy beyond the 9-1-1 context. Nor should the Commission consider broader privacy and security issues in this proceeding. The obligation stated above – data associated with 9-1-1 calls should only be used for 9-1-1 purposes or otherwise required by law, and not for commercial purposes – is appropriate.

---

<sup>50</sup> See, e.g., AT&T Comments at 2, 4; CTIA Comments at 3, 10-11.

<sup>51</sup> See *Fourth Report and Order* ¶¶ 69-71.

## VIII. CONCLUSION.

The record shows a broad range of stakeholders across the 9-1-1 ecosystem share the goal of ensuring the delivery of accurate, actionable vertical location information to help public safety respond to wireless 9-1-1 calls. However, more progress needs to be made, and the record reflects varied viewpoints on how the Commission should move forward. For this reason, the Commission should facilitate further discussion among all stakeholders to assess vertical location policy going forward.

Respectfully submitted,

/s/ Matthew B. Gerst

Matthew B. Gerst  
Vice President, Regulatory Affairs

Scott K. Bergmann  
Senior Vice President, Regulatory Affairs

Thomas C. Power  
Senior Vice President and General Counsel

**CTIA**  
1400 Sixteenth Street, NW  
Suite 600  
Washington, DC 20036  
(202) 785-0081

Dated: June 18, 2019